LAND USE

Historical Development

The first inhabitants of the basin were ancient "mound building" people. Evidence including burial mounds, skeletal remains and artifacts of their occupation was found near the mouth of the Missouri and Osage rivers and along the Moreau River. At the time of westward expansion, the land was occupied by Osage indians. In the late 1700's, French hunters and trappers sought the resources of the Moreau and Osage rivers. During 1812-1816, they were followed by white settlers coming primarily from Kentucky and Tennessee. Large-scale immigration followed in the 1820's. Cole County organized in 1820. It was followed by Morgan (1833), Miller (1837), and Moniteau (1845) counties (Conard 1901).

Early settlers found prairie in the central and northern parts of Morgan County, the south and western parts of Moniteau County and northwest part of Miller County. The central and eastern parts of Moniteau County were woodlands (Conard 1901). Timber consisted of various oaks, white and black walnut, hickory, elm, maple and sycamore. Several fine springs were reported in the southeastern part of Moniteau County (Campbell's Gazetter of Missouri 1874). Around the turn of the twentieth century, most of Cole Cunty was untillable with only 70,000 A cultivated (30% of the land). Forty percent of Morgan and 85% of Moniteau counties were cultivated (Conard 1901).

The most profitable businesses in Morgan County were raising stock and mining. Moniteau County residents profited most in farming and livestock (Conard 1901). Major crops included corn, wheat, oats, flax, tobacco and potatoes. Hay was widely cultivated. In 1898, surplus livestock products shipped from Moniteau County included cattle (4,279); hogs (25,511); sheep (3,983); horses and mules (703); poultry (721,575 pounds); and game and fish (32,335 pounds) (Conard 1901). Deposits of coal, lead and barites were also found. Lead and coal were mined close to Burris Fork near High Point around 1855 and also near the Moniteau/Cole county line in 1857. Smelters were also open near California. Coal was mined 2.5 miles southeast of Tipton and in the vicinity of California. Good potters' clay was found 3 miles west of California. (Campbell's Gazetter of Missouri 1874, Conard 1901).

Recent Land Use

The total human population of counties encompassing this basin was 112,151 in the 1990 U.S. population census. Of this population, an estimated 39,000 people reside in the basin based on township population estimates and estimation of the percentage of each township located in the watershed. The cities of Jefferson City, California, Tipton, Versailles, and Eldon, ring the border of the watershed but only portions of these towns have drainage into the Moreau watershed. A total of 2.6% of the land coverage in the basin is urban.

Grassland and cropland comprise 72.8% of the land use in the basin (MoRAP 1997). Grassland and cropland predominate in the western half of the basin whereas forest, grassland and woodland predominate in the eastern half of the Basin (Figure lu).

As in the past, raising livestock and farming remain important businesses in the basin. In Cole, Miller, Moniteau, and Morgan counties, livestock sales accounted for greater than 75% of total agricultural sales in 1992 (DuCharme and Miller 1996). In 1997, there were 3,287 livestock operations in these counties which produced 237,247 animal units (animal unit=1000 pounds live weight) (Table 1; Barney 2002, *personal communication*).

Hay, soy beans, corn and wheat are the primary crops grown in the basin. The *Missouri Agricultural Statistics Service* (2002) reported a total production of 315,000 tons of hay, 3,473,000 bu corn, 401,200 bu wheat, and 1,372,000 bu soybeans for the four counties encompassing the basin in 2000.

The old coal and lead mines near California, Tipton and High Point are now closed. Currently, there are 3 active limestone quarries in Cole County near Jefferson City and 7 sand and gravel removal operations on streams (MDNR 2002b).

Soil Conservation Projects

There is one completed and two active soil conservation projects underway in the basin. A 5-year Special Areas Land Treatment Project (SALT) was completed in FY 1996 in the Honey Creek watershed, Cole County. Of this 6,337 acre watershed, 2,206 acres received soil erosion control treatments. The two ongoing projects are an Environmental Quality Incentive Program (EQIP) project covering the entire Moreau watershed and an Agricultural Non-Point Source Special Area Land Treatment (AGNPS SALT) project encompassing the upper portion of the North Moreau Creek, and its tributaries Willow Fork Creek, Straight Fork Creek, Smith Branch, Kelly Branch, and Willow Branch. The EQIP project is 10 years in length (FY 99-2009). Its focus is primarily water quality improvement through improved animal waste management. It provides cost-share for items like stackhouses, management intensive grazing systems, and woodland protection through livestock exclusion.

The AGNPS SALT project is funded for 7 years. Its goals are similar to that of an EQIP project but it focuses on a smaller geographical area and includes streambank stabilization, filter strips, and soil erosion control measures for cropland as well as planned grazing systems and nutrient management. For more information on AGNPS SALT and EQIP projects in Morgan and Moniteau counties, contact your local Soil and Water Conservation District (Table 2).

Public Areas

There are no federal lands or state parks located in the watershed. However, there are 7 areas either owned or managed by cooperative agreement with the Missouri Department of Conservation which are open to the public (Table 3; Figure pa). Moreau 50, Honey Creek, Stringtown Bridge, and Scrivner

Road CA provide access to the Moreau River, North Moreau and South Moreau creeks (Figure pa). The Honey Creek and Moreau 50 accesses have concrete boat ramps. Recreational opportunities for lake fishing, bird watching, nature viewing, or hiking can be found at Hough Park, Proctor Park, Scrivner Road CA and Hite Prairie CA. Prairie flowers can be viewed at Hite Prairie CA located on the watershed divide near the southwest edge of Versailles in Morgan County. For more information or maps for these areas visit the MDC website (2002) at http://www.conservation.state.mo.us/atlas or consult a *Missouri's Conservation Atlas A Guide to Exploring Your Conservation Lands* (1995) published by the MDC, Jefferson City, MO.

Floating by small john boat or canoe on the Moreau River, North Moreau and South Moreau creeks is enjoyed from the vicinity of Russellville downstream to the confluence of the Moreau and Missouri rivers. Rockhouse Bridge, 5.5 miles south of McGirk off Hwy K and Decatur Bridge on Hwy AA south of Russellville are the uppermost put-in points (Figure pa). Floating is best during the springtime when water levels are high. Later in the year, portage over shallow riffles becomes necessary.

U.S. Army Corps of Engineers Jurisdiction

The U.S. Army Corps of Engineers Jurisdiction Corps regulates the construction of structures, and the excavation and filling of wetlands, rivers, streams and lakes. Some examples of regulated activities include but are not limited to placement of riprap, gravel excavation, bridge, dam and levee construction, land-filling, and creation of borrow pits in wetlands. For this basin, regulatory jurisdictions for alterations are with the Missouri State Regulatory Office (Cole and Moniteau counties) and Truman Satellite Office (Morgan and Miller counties) of the U.S. Army Corps of Engineers (Table 4).

Table 1. Livestock population estimated from U.S. Census of Agriculture, 1997 (Barney 2002, personal communication).

County	Total number livestock operations	Total AU on livestock farms	Number of confined operations	Total AU on confined operations
Cole	844	35,678	424	8,284
Moniteau	841	56,801	533	17,864
Morgan	708	67,619	478	36,745
Miller	894	77,149	561	37,445
Total	3,287	237,247	1,996	100,338

AU=animal unit=1000 pounds live animal weight; Livestock=beef, dairy, swine and poultry; Confined operation= livestock held in a feedlot or other facility such that accumulated manure needs to be removed on a regular basis

Table 2. Address information for Morgan and Moniteau Soil and Water Conservation District offices.

Morgan Co. SWCD	Moniteau Co. SWCD	
100 S. Burke St.	410 W. Buchanan St.	
Versailles, MO 65084-1004	California, MO 65018-1223	
Phone: 573-378-4589 Ext 3	Phone: 573-796-2010 Ext 3	
FAX: 573-378-6163	FAX: 573-796-4520	

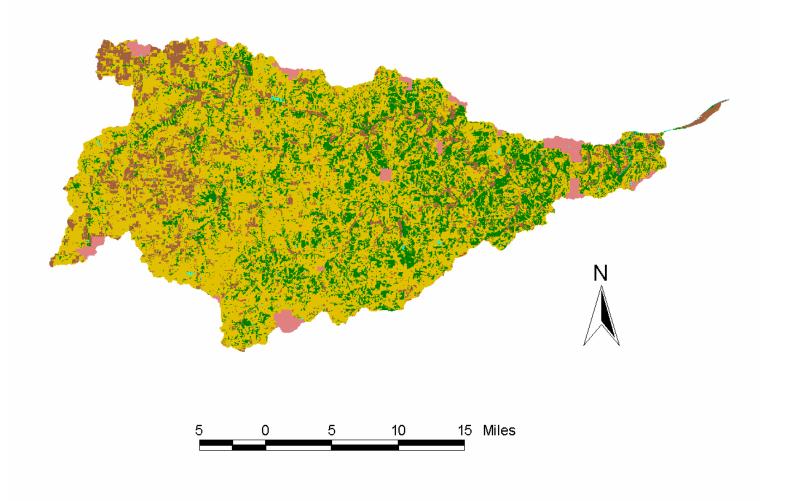
Table 3. State managed public areas in the Moreau River basin (MDC 1995, MDC 2002).

County	Area Name (Management)	Total acres	Ponded acres	Stream Frontage Facilities	Access to Stream
Cole	Hough Park Lake (Jefferson City CAP)	153	7	0	-
	Honey Creek Access (MDC)	85	0	0.3 mi, boat ramp 0.4 mi	Moreau R. Honey Cr
	Moreau 50 Access (MDC)	10	0	0.25 mi, boat ramp	Moreau R.
	Scrivner Road CA (MDC)	919	8	1.7 mi	S. Moreau Cr
	Stringtown Bridge (MDC)	50	0	1.0 mi	N. Moreau Cr
Moniteau	Proctor Park Lake (California CAP)	38	7	0	-
Morgan	Hite Prairie CA (MDC)	103	0	0	-

CAP-Community Assistance Program. Local entities and MDC have a partnership whereby the MDC provides management of a lake for public use.

Table 4. Field office addresses for U.S. Army Corps of Engineer offices have jurisdiction for the Moreau basin.

Missouri State Regulatory Office	Truman Satellite Office	
221 Bolivar Street, #103	Route 2, Box 29-C	
Jefferson City, MO 65101	Warsaw, MO 65355	
Tel: 573-634-4788	Tel: 660-438-6697	
FAX: 573-634-4895	FAX: 660-438-6909	



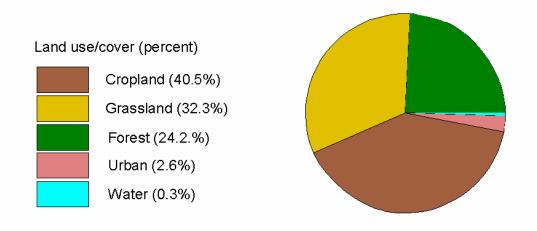


Figure lu. Land use in the Moreau River Watershed, in Missouri.

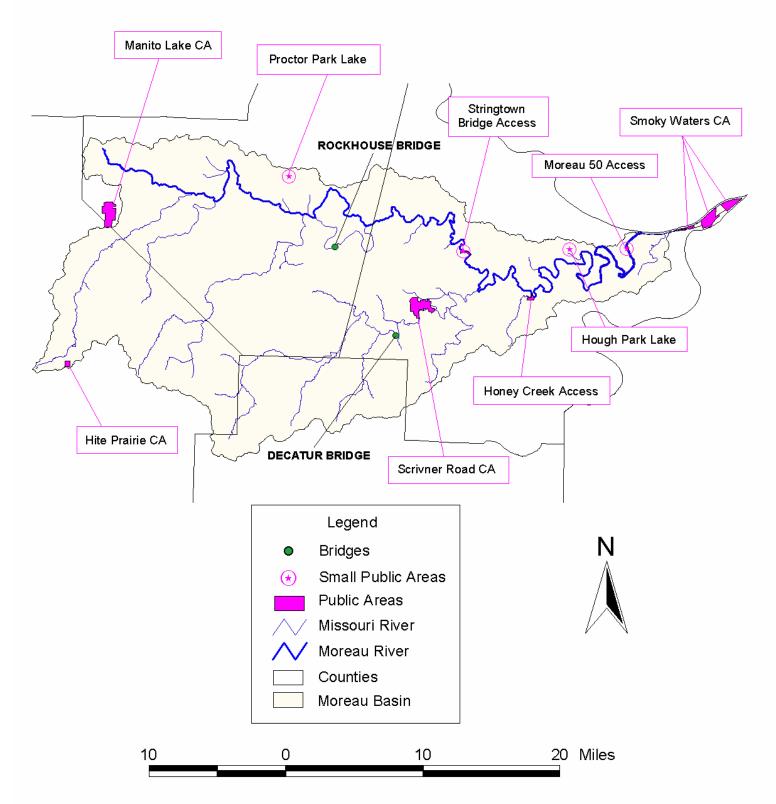


Figure pa. Public areas within the Moreau River watershed. CA = Conservation Area